

What Is Claimed Is:

1. (New) A medical implant for deployment within a patient comprising:  
an implant body having a first surface,  
the first surface of the implant body covered with a filter material, the filter material in contact with a catalyst.
2. (New) The medical implant of claim 1 wherein the filter material is a mesoporous material.
3. (New) The medical implant of claim 1 wherein the catalyst is positioned between the implant and the filter material.
4. (New) The medical implant of claim 1 wherein the filter material covers the entire first surface of the implant.
5. (New) The medical implant of claim 1 wherein the catalyst covers the entire first surface of the implant.
6. (New) The medical implant of claim 1 wherein the filter material also comprises a therapeutic.
7. (New) The medical implant of claim 1 wherein the catalyst also comprises a therapeutic.
8. (New) The medical implant of claim 1 wherein the filter material covers the first surface and the second surface.
9. (New) The medical implant of claim 1 wherein fluid in contact with the implant must pass

through the filter in order reach the catalyst.

10. (New) The medical implant of claim 1 wherein the catalyst is titanium oxide.
11. (New) The medical implant of claim 1 wherein the filter is adapted to retard the travel of red blood cells and white blood cells through it.
12. (New) The medical implant of claim 1 further comprising a polymer coating, the polymer coating positioned between the filter and the catalyst.
13. (New) The medical implant of claim 1 wherein the implant body includes a stent.
14. (New) The medical implant of claim 13 wherein the filter is positioned along a first face, a second face, and a third face of the stent.
15. (New) The medical implant of claim 13 wherein the filter does not cover at least a portion of the stent.
16. (New) The medical implant of claim 1 further comprising a polymer layer covering the first surface of the implant body.
17. (New) The medical implant of claim 16 wherein the catalyst is positioned between the polymer and the implant body.
18. (New) The medical implant of claim 16 wherein portions of the polymer have been removed to create access paths through the polymer.

19. (New) The medical implant of claim 18 wherein the implant body contains indentations coinciding with the location of at least one access path in the polymer.
20. (New) The medical implant of claim 16 wherein the polymer comprises a therapeutic.
21. (New) The medical implant of claim 1 wherein the filter comprises carbon nanotubes.
22. (New) The medical implant of claim 1 wherein the filter comprises bucky paper.
23. (New) The medical implant of claim 1 wherein the implant contains stent struts having tapered cross-sections, an inner surface of the strut having a larger area than an outer surface of the strut.
24. (New) The medical implant of claim 1 wherein the first surface of the implant is covered by titanium, iridium oxide, and bucky paper.
25. (New) The medical implant of claim 1 wherein regions of high strain of the implant when the implant is expanded are not covered with the filter while regions of relatively lower strain when the implant is expanded are covered with the filter.
26. (New) The medical implant of claim 1 wherein the catalyst is chosen from a group consisting of manganese, iridium oxide, and platinum.
27. (New) The medical implant of claim 1 wherein the catalyst has been previously treated to increase its surface area.
28. (New) The medical implant of claim 1 wherein the filter is bucky paper containing iridium

oxide.

29. (New) The medical implant of claim 1 wherein the implant body comprises a polymer.

30. (New) The medical implant of claim 1 wherein the medical implant is a non-polymer and the catalyst promotes the decomposition of hydrogen peroxide to hydrogen and oxygen.

31. (New) A medical implant comprising:

a plurality of connected struts,

a first strut having a tapered cross-section, the cross-section becoming smaller in area when moving from a reference point on the inside of the implant to the outside of the implant.

32. (New) The medical implant of claim 31 further comprising a second strut, the second strut having a tapered cross-section, the cross-section becoming smaller in area when moving from a reference point on the inside of implant to the outside of the implant, the cross-section of the second strut being different than the cross section of the first strut.

33. (New) The medical implant of claim 32 wherein the struts are stent struts from an expandable stent.

34. (New) The medical implant of claim 31 wherein at least one of the struts is covered with a filter, the filter covering a catalyst.

35. (New) The medical implant of claim 34 wherein the catalyst promotes the decomposition of hydrogen peroxide to hydrogen and oxygen.